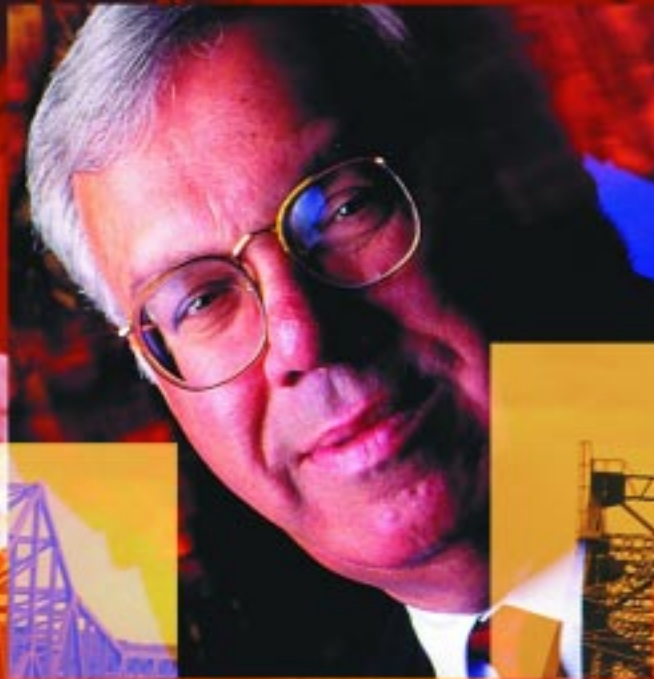Focus: **Collaboration & Partnerships**

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EDUCATION » TECHNOLOGY » FAST FORWARD

*Mayor Thomas Menino
City of Boston*

**IT TAKES A COMMUNITY
TO BUILD A BRIDGE**

December 2000

Editor's Note: Our November 1998 issue featured Boston Mayor Thomas Menino's (right) proactive leadership role in mobilizing a team of committed individuals to connect the city's public schools to inspiration and opportunities brought on by technology. In the process, it was people — students, teachers, community members — who connected with each other. Today, with the city's Digital Bridge partnership in place, Boston schools are a shining example of collaboration and partnerships done with success. The Boston story is worth revisiting. Here we further examine the city's progress and plans for the future, and some of the people making a difference.

Pictured above: **Ann Grady** and **Ed DeMore**; **Felicia Vargas**; (l-r) **Ken Umansky, Chuck Longfield** and **Steve Gag**; (bottom) Members of Boston's digital community.
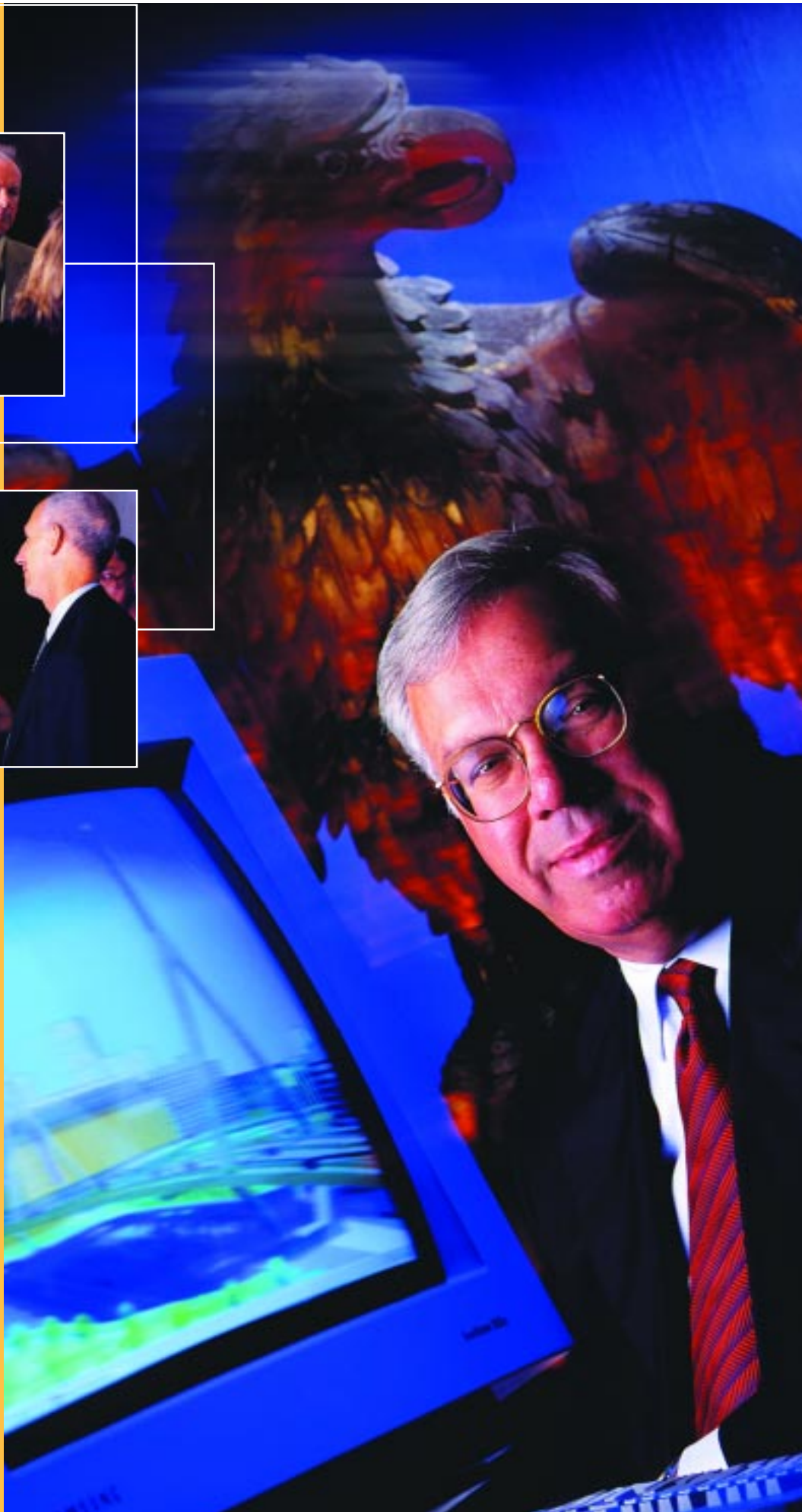
BUILDING THE DIGITAL BRIDGE IN
BOSTON

EDUCATION IS A POLITICAL FOOTBALL. IT GETS TOSSED
around, kicked around and talked about a lot. But you don't often find someone who actually risks getting blind-sided, picks up the ball and runs for a touchdown. Boston Mayor Tom Menino is that rare exception. He wasn't content to sit on the sidelines and criticize. He got involved. And he is making a difference. **A huge difference.**

Long before any other urban mayor, Menino recognized that technology was a new and critical component of an effective education reform strategy. The technology initiatives that he and his team have put in place are as remarkable for their vision and daring as for their impressive results. High-school students are going into good paying jobs right out of school — many of them holding professional certifications earned while still in school. Growing numbers of students are signing up for after-school classes that are honing their technical and technological skills. Parents and teachers are discovering how to use the Internet to communicate about school-related activities. Businesses are enjoying access to a motivated and well-trained pool of homegrown talent.

BY DAN PAGE | PHOTOGRAPHY BY GEORGE SIMIAN

## MayorThomasMenino:
Commitment Makes All the Difference

"Every kid is important," Mayor Thomas Menino said emphatically. And something about his tone of voice, his matter-of-fact way of saying it, lets you know that this is not political rhetoric. He means it. A proud grandfather of four, Menino has a personal stake in Boston's educational future. He takes it very seriously.

"Education is the hub of all success," Menino said. "Good jobs, a good life, good housing — education is at the center of it all. And without education, good things in life fall by the side."

Menino credits a large part of Boston's success in building a digital bridge to the city's diversity. "Diversity is our strength," he said. "It teaches people to value differences and to get along with one another. We need to capture that energy, put the brainpower in our city to work." He points with justifiable pride to the growing numbers of technology centers in Boston that are helping to bring children, adults, seniors and entire families into the Digital Age.

When he set high and specific goals for achievements in technology, the mayor surprised many. His response: "You've got to have goals. Without them, you just stumble along." The city is well on track to meet its goal of one computer for every four students, computers for all teachers, and interconnection of schools and library resources.

"People ask me what I want to be remembered for," Menino said. "It's not the building development. It's human development. Providing an educational system that can take kids and families to their potential. That's what it's all about."
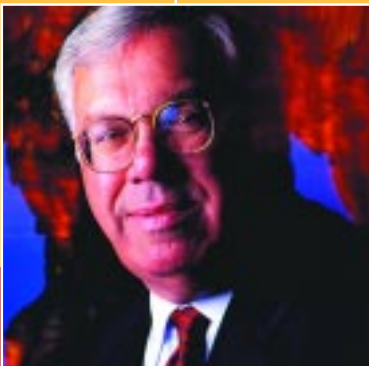
What makes these achievements more remarkable still is that Menino boldly and publicly called his play. He didn't just work quietly behind the scenes and then take credit for things when they worked out. He started by announcing to all who would listen that Boston had a problem. He quantified the problem, against the advice of his advisers and promised an ambitious fix. Too ambitious, many thought. In less time than it takes to say "wired for the Internet," Menino and his hard-working team had sketched out a game plan, raised a staggering amount of non-tax dollars and put together a multi-pronged program to meet the challenge of building a bridge for Boston's students and families to cross over into the digital economy.

The entire Boston community — industry, teachers, parents, students and politicians — have stepped up to the challenge and given everyone something to cheer about. The diversity of viewpoints and talents that are shaping this effort are all pulling together to help build a technology bridge that will benefit families, individuals, business and the economy as a whole. In fact, it is largely due to the diversity of interests involved that the project is working so well.

A COURAGEOUS BEGINNING

In 1996, Menino delivered his state of the city speech from the Jeremiah Burke High School, a rundown inner-city facility. Menino wanted to make a statement. It would have been easy to take a safer stand on education with a less visionary program, but he was intent on making the point that all was not well. Something was broken and badly in need of fixing.

To the amazement of all, he abandoned the tried-and-true path of feel-good generalities and spelled out in clear, unmistakable terms his vision for a digital bridge. He moved quickly from higher standards to extended days to improved facilities.

"By the year 2001," Menino said, less as a prediction and more as an *or else*, "there will be computers not just in the labs, but in every classroom. One computer for every four students. A computer for every teacher. Every school library linked to the 6 million books of the Boston Public Library." All Boston schools would be networked to the Internet with high-speed access.

At that time, Boston had a student-to-computer ratio of 63-to-1. An estimated 5 to 10 percent of teachers had computers, but few if any computers were used in the classroom. A couple of schools had dial-up access to the Internet. The facts were grim. With well-to-do suburbs in every direction just minutes away, Boston was virtually the poster city for the Digital Divide. But it was a city ready, willing and able to build a bridge.

JUMP-STARTING THE REVOLUTION

Mayors tend to take one of two routes in instituting change of any kind. Some appoint study groups, pass the results along for analysis, iron out the rough spots with focus groups and go back into a new study phase when they inevitably learn that change costs too much. Then there is the Menino way: Just do it.

Menino's team chose to work by leaps and bounds. They enlisted the aid of local and out-of-state businesses, volunteer parents, unions — anyone who could be moved by self-interest, altruism or plain old-fashioned political arm-twisting. Some held back, believing it couldn't be done. Boston had bitten off more than it could chew.

Then 3Com donated a million dollars worth of equipment. Other companies took notice. The International Brotherhood of Electrical Workers donated time and materials to wire Boston schools for the Internet. By October 1998, Boston had become the first major city in the country to have networks and high-speed Internet access at all its schools. Ahead of the mayor's timetable.

"It was a little like a multi-level chess game," said Steve Gag, technology adviser to the mayor. "We needed a solid plan to prove to businesses and the community that we could do what we said. We needed the support of business to guide the program, give

job easier and more interesting, of family communication."

Ruthella Logan-Cruz

Resonating Impact
Echo Tsai, CEO of HiQ Computers

HiQ provided the first 1,000 computers that launched Boston's Technology Goes Home initiative. That donation — and HiQ's offer of free teacher training — soon motivated other companies to extend their support.

"We think training is the key here," said Tsai. "Like we all know, computers are just machines. Humans make them work."

<www.hiq.com>

it relevance and keep it grounded in reality. We needed the school community to tell us what they wanted, what they expected — and to work with us to build the momentum and keep it going."

Today, Boston is showing what can be done when a Digital Bridge is built, allowing an entire community to cross into new jobs, opportunities and visions of the 21st century. Businesses such as 3Com, America Online, Microsoft, Verizon Communications, Arnold Communications, Keane, Target Software, Intel, HiQ and Foley, Hoag and Eliot, have come aboard, providing expertise, support and state-of-the-art equipment. Schools have stepped up to the challenge, students have shown what can be accomplished, and neighborhoods are being brought closer together by technology.

Today Boston has 130 networked schools, a computer-to-student ratio of 1-to-6, 65 percent of its teachers trained in the effective classroom use of technology, 1,500 students enrolled in certified technology classes, 26 networked libraries and 100 networked community centers (40 of these funded and endowed by the Timothy Smith Trust Fund). The original million-dollar gift from 3Com has now been supplemented by more than $20 million from the private sector, $50 million from the city of Boston, and $65 million from the federal e-rate program. Boston's digital bridge is still a work in progress, but the progress is both real and highly relevant to the current and future well-being of the city, the state and the region.

The ability to draw upon the strengths of diversity was part of the solution. The ability to juggle several initiatives at the same time, with positive results fueling other positive results, was also important. But the biggest difference was that Mayor Menino took a stand, rallied people behind his cause and worked around the clock to make it happen.

THE PUZZLE COMES TOGETHER

According to Boston's superintendent of public schools, Tom Payzant, "The picture started to come into focus when Ann Grady, director of technology for the schools, recommended we ask the business community to help us draft a plan for wiring Boston's schools." According to the plan, schools that wanted to be considered for connection to the Internet were required to write a proposal that would include a plan for the instructional use of computers. "The response was overwhelmingly positive," said Grady. "Within an eight-week period, 18 schools were wired. That showed what could be done with hard work and good will."

Next, the task was to find the support to provide Internet access at all of Boston's high schools within a one-year period. That's where 3Com's generosity came in, and Net Year was born. "Mayor Menino really got it," said David Katz, director of education at 3Com. The task was completed in 14 months.

In 1996, Boston's prestigious Latin School launched a technology program that highlighted the citywide efforts. Boston

B.Keith**Fulton:** Making Boston a Model

As executive director for corporate relations for America Online, Keith Fulton helps build programs that promote opportunity in the digital economy. He was formerly director of technology programs and policy for the National Urban League, serving as senior adviser to 115 local affiliates.

"The people at America Online are well aware that the Internet has the power to reduce isolation and inequities in our society," Fulton said. "We have a responsibility to make sure this new medium benefits everyone and that no one gets left behind.

"When we learned about the multiple technology initiatives going on in Boston, we could see that a lot of the right things were coming together to make a difference. It was in line with our efforts to help find ways of scaling up public/private ventures to serve the broader community.

"Boston is doing some innovative things in its emphasis on using local leadership, local strategies and local people to bring technology into the schools and homes. Our hope is that the AOL team can leverage those efforts and add capacity in ways that Boston's Digital Bridge becomes a model for other cities to follow."

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AndrewViterbi: Looking Forward, Giving Back

Andrew Viterbi graduated from Boston Latin School in 1952. He went on to become a co-founder of QUALCOMM, a leading provider of digital wireless products. He also has received honorary degrees and serves on President Clinton's Information Technology Advisory Committee. "I attribute my start in life to the education I received," he said. And to show his appreciation, he recently made a major donation to Boston Latin to endow a full-time director of technology.

Viterbi, who came to the United States from Italy with his parents at the age of 4, chose "to share his good fortune" because of the good example that Boston Latin sets in "helping to mainstream people of Boston who are struggling to establish themselves."

Because of Viterbi's gift, Boston Latin now has a fully qualified, full-time technology director, Catherine Meany, who will oversee teacher training and the integration of technology into the classroom. Among the initiatives underway at Boston Latin are: teacher stations connected by a ceiling-mounted projector in all classrooms, special labs to enhance learning in the arts, sciences and foreign languages, and a new computer-graphics lab.

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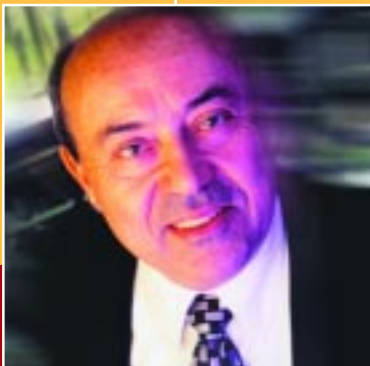
Latin, the nation's oldest public school, founded in 1635, received a large gift from Andrew Viterbi, an alumnus of the school and former co-founder and vice chairman of QUALCOMM. The endowment enabled Boston Latin to hire a full-time director of technology to oversee teacher training and the integration of technology into the curriculum. As a result, Boston was viewed, more than ever before, as a city intent upon leadership in educational reform — and intent upon using 21st-century technology to achieve its goals.

Another part of the big picture came into focus with the 1998 launch of TechBoston through the support of 3Com and Cisco Systems (originally, funds were from a Technology Literacy Challenge Grant; there are now many partners, including 3Com and Cisco), which provided equipment, curriculum and training. In its first year, the program enrolled 100 students in pilot courses. "We are providing students with skill sets needed for professional certification or to move on to higher education," said Mary Skipper, Tech-Boston's high-powered founder.

The kids support technology in the schools and help teachers with networking, computer skills, Web design, robotics and database modeling. They also provide the Boston Public Library and other community-based organizations with IT support and training. With the assistance of industry professionals, TechBoston is providing a very high level of training that has allowed some students to move directly into well-paying and responsible positions with local companies. Other students have obtained internships that allow them to learn on the job and to become familiar with industry's technological needs.

TechBoston has grown each year since the '98 pilot — 750 students in 1999 and 1,500 students this school year — and it will double again next year. The plan is to expand TechBoston electives into every high school and to offer robotics and Web design courses to middle-schoolers as a way of introducing them to technology early on. A further step was to expand

TechBoston programs to adults in the community centers.

TechBoston is playing a key role in building the skills and foundation of expertise required to integrate technology throughout the system. It is creating a win-win situation in which industry partners support the efforts to educate future workers, and students benefit from the hands-on experience that will increase their value in the workforce.

USING TECHNOLOGY TO BUILD COMMUNITY

By 1998, 130 Boston Public Schools, 26 libraries and 100 community centers were networked, *with* high-speed Internet access, growing numbers of computers in the schools and a cadre of students and teachers who knew how to make technology work in the educational arena. However, fewer than one child in 10 had a computer at home, compared to a nationwide average of almost 60 percent. Ed DeMore, a former real-estate entrepreneur and member of Menino's tech team, remembers hearing the mayor say: "Until kids have a computer at home, and until their parents can use a computer at home, they don't have the power." That's when he went looking for a corporate partner with the vision and commitment to make a difference.

"We had some leverage," said DeMore. "We could point to the very significant progress that Boston had made. We could show corporate commitment through the TechBoston program. We could call attention to Boston Latin, which was a model for technology and for educational excellence in general. But the question remained, how do we find a corporate sponsor to step up and take us to the next level?"

Common sense would say that it would take a large company to make the kind of impact Boston needed, but the larger companies were skeptical. It was HiQ, a smaller and relatively unknown company, that came through. Menino received a phone call from the Sunnyvale, Calif. computer firm, and the question from CEO Echo Tsai was simple:

them you just stumble along."

"... a lot of the right things were coming together to make a difference."
B. Keith Fulton
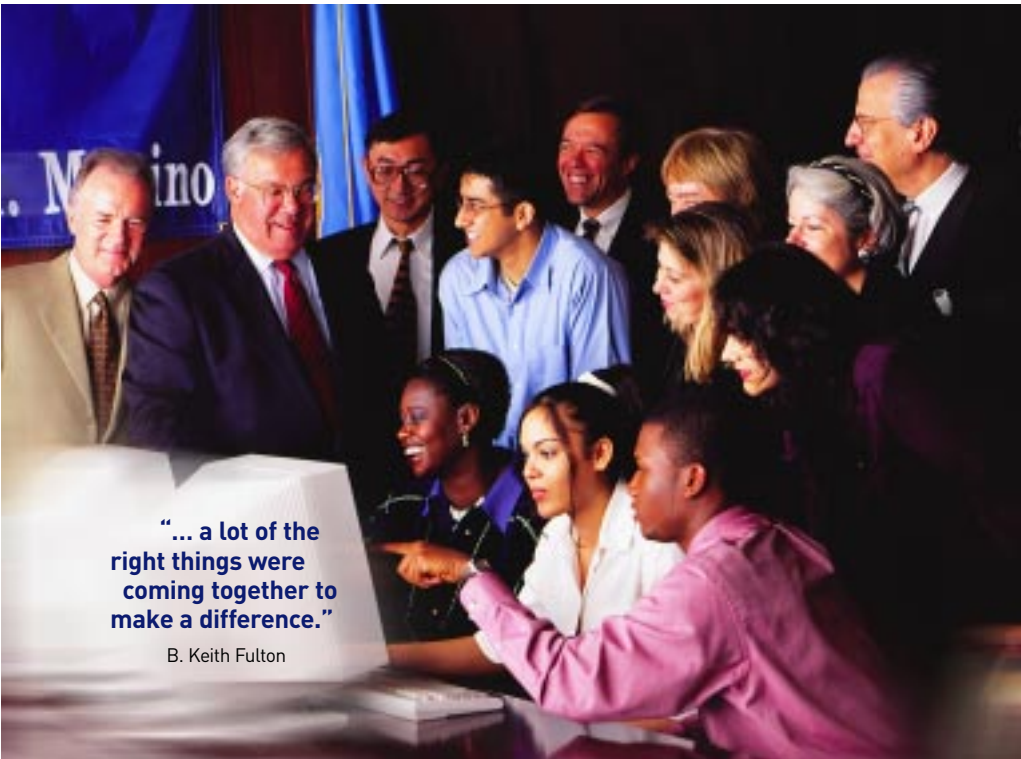
Team Players. (Seated, l-r) **Ruthella Logan-Cruz**, Technology Goes Home Coordinator; **Eduvirgen Gonzales**, Madison Park High School student; **Joel Lamousnery**, TechBoston graduate, Northeastern University student. (Middle row, l-r) **Ed DeMore**, Technology Adviser to the mayor; **Mayor Thomas Menino**; **Al Lau**, Director of the Office of Information Systems, Boston Public Schools (BPS); **Adnan Qayyum**, John D. O'Bryant High School student; **Mary Skipper**, Director of TechBoston; **Sylvia Mejia**, parent graduate of Technology Goes Home. (Back row, l-r) **Chuck Longfield**, President of Target Software; **Ann Grady**, Director of Instructional Technology, BPS; **Felicia Vargas**, Assistant Director of TechBoston; **Ken Umansky**, Director of Technology, Arnold Communications.

"Would 1,000 computers donated to the city be enough to launch a project that would involve the larger community?"

The answer was yes, and Technology Goes Home was born.

The plan was simple, but bold and innovative. Its key was to involve neighborhood organizations: Have local organizations be the focal point, get input from parents on what they wanted, what they thought would work. Technology Goes Home became a collaboration in which parents, industry, local organizations and the city of Boston worked as partners — stakeholders with mutual interests — to provide equipment, training and support to connect homes and families to the Internet.

Tsai further offered to provide teacher training at no charge, and her generosity

helped to attract corporate support from other donors. 3Com provided high-speed modems, Keane and Target Software assisted with planning and implementation, Linking Up Villages provided a Web-based network developed at the MIT Media Lab, Microsoft donated Windows and Office software, and Staples and Lexmark teamed up to provide bubble jet printers.

Two pilot programs have been completed, with families receiving 12 weeks of training. After that, they got to take home a computer, along with a modem, free Internet access and a printer. The program has been carefully monitored, refined and broadened. It's working. MIT agreed to serve as an impartial outside observer, and thus far the project is getting high marks and gaining valuable insights into ways to

JoelLamousnery:
A Shining Example for TechBoston

Education and technology are a powerful combination. When you add to that a healthy dose of motivation, the result can be amazing. Consider Joel Lamousnery, who came to the United States from Haiti six years ago and graduated from Dorchester High School in Boston. Joel learned about the Tech-Boston after-school program and signed up to earn certification as a Microsoft Certified Systems Engineer (MCSE).

MCSE is one of the most demanding and intensive professional certifications in the computer field. It requires in-depth knowledge of Microsoft products in four areas and of general networking technology in two areas. Six rigorous exams put aspiring professionals through their paces. Joel completed all six tests and received his MCSE certification in less than a year.

Joel was motivated to work hard because he has his sights set on becoming a chief information officer after college. He has a great start. His technical abilities earned him an internship as a network administrator with Boston's local phone company, Verizon Communications. He has recently started a new internship with Breakaway Solutions. The money he earns is helping to pay his way through Northeastern University, where he is a freshman majoring in management information systems.

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RuthellaLogan-Cruz:

Technology Goes Home and Goes to Work

"I needed to e-mail my paper to my professor at Bunker Hill Community College," recalled Ruthella Logan-Cruz, "and the computer at work was down. So I stopped in at the Elm Hill Family Service Center in Dorchester (a Boston neighborhood) and asked if they could help." That's when Logan-Cruz met Kate Snow, who was running the local tech center for Boston's new Technology Goes Home program. "Kate explained I could apply for computer training, and if I was accepted and passed a test at the end, I could take a computer home. It was too good to pass up."

After 10 weeks of training, Logan-Cruz took a computer home with her — and it was a big hit. Her 12-year-old son, Francisco, does all his school papers on the computer, loves the music features available, and uses it in his photography apprenticeship. Her 3-year-old daughter can work the mouse and make the screen change. And Logan-Cruz does everything from PowerPoint presentations, to creating brochures, to organizing her case-management load for Action for Boston Community Development Head Start.

"It's made my job easier and more interesting," Logan-Cruz said, "and it's opened up new lines of family communication. There's no generation gap here," she said. "Yes, I'd certainly say Technology Goes Home changed our life."

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improve the model and make it even more effective. An additional $2.5 million dollars was raised, including a U.S. Department of Commerce grant, to expand Technology Goes Home to neighborhoods throughout Boston. More than one third of the adults in the pilot have become employed or improved their existing jobs.

MANAGING A CRITICAL MASS OF TECHNOLOGY

Today, Boston has reached a point where technology in the schools is no longer a dream. It is real, and it is pervasive. Much remains to be done, and the future is a rapidly changing landscape in which learning is a lifetime process. The question for Boston now is how to maintain the momentum, how to learn from what has been done and how to manage technology in ways that maximize the benefits to all. The answer is the Boston Digital Bridge Foundation, organized by five leaders of technology companies.

The foundation partners with community service providers, educators and families, all working together to create and manage programs that bring technology into people's everyday lives. The name of the foundation acknowledges the opportunity, going beyond the negative implications of a digital gap and focusing on the future — a digital bridge where all can cross over into new opportunities.

THE CITY ON THE HILL

It began with an understanding that Boston had to do better by its schools, its students and its families. That understanding became the basis of a commitment to act quickly and courageously. That commitment became the underpinning of Mayor Thomas Menino's administration. He articulated a vision, enlisted the support of those who shared that vision, and set about creating the reality.

The reality is that Boston is a model of what can be done when people care enough and are willing to work hard for what they believe in. The model is complex, with businesses, schools, teachers, politicians, families and community organizations all playing key roles. What makes the model work is the fundamental understanding by all involved that there are mutual benefits to be gained. No one loses. Everyone wins.

Boston, with its world-class universities, has long been a "city on the hill" for those in search of educational excellence. Technology has begun to democratize these educational hopes and dreams more than ever before. With a new generation of citizens dedicated to the betterment of all, the city is shining more brightly than ever. As Boston pulls its diverse neighborhoods and resources together to connect people with their potential, the city on the hill with all its promise is becoming more accessible than ever before. That's what Boston's Digital Bridge is all about. ∎

WEB SITES

Boston Public Schools
<www.boston.k12.ma.us>

City of Boston
<www.ci.boston.ma.us>

Boston Digital Bridge Foundation
<www.techboston.org/daley/mdbf.htm>

TechBoston
<www.techboston.org>

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